

APPENDIX I

GLOSSARY

ABO—Aviators breathing oxygen.

ACM—Air-cycle machine.

ACS—Air-conditioning system.

ADC—Air data computer.

AFC—Airframes change.

AIMD—Aircraft intermediate maintenance department.

ALLOY—A metal that is a mixture of two or more metals.

AMBIENT—Surrounding; adjacent to; next to. For example, ambient conditions are physical conditions of the immediate area such as ambient temperature, ambient humidity, ambient pressure, etc.

AN—Air Force—Navy (standard or specification).

ANOXIA—A complete lack of oxygen in the blood stream.

APU—Auxiliary power unit.

BIT—Built-in tester.

BLEED AIR—Hot, high-pressure air, taken from the compressor section of a jet engine.

BRU—Barastatic release unit.

CAD—Cartridge and cartridge-actuated devices.

CAUTION—An operating procedure, practice, etc., that if not strictly observed could result in damage to or destruction of equipment.

CCU—Component control unit.

CDI—Collateral duty inspector.

CELSIUS—A temperature scale using 0 as the freezing point of water and 100 as the boiling point. The scale has 100 equal divisions between the 0 and 100 with each division designated a degree. A reading is usually written in an abbreviated form; for example, 75°C. This scale was formerly known as the centigrade scale, but it was renamed in recognition of Anders Celsius, the Swedish astronomer who devised the scale.

CF₃Br—The chemical symbol for trifluorobromomethane.

CNO—Chief of Naval Operations.

CONTAMINANT—An impurity such as harmful foreign matter in a fluid.

DODIC—Department of Defence Information Code.

DTG—Date-time group.

ECS—Environmental control systems.

EI—Engineering investigation.

FCDC—Flexible confined detonating cord.

FLSC—Flexible linear shaped charge.

GPM—gallons per minute.

Hg—Mercury.

IMA—Intermediate maintenance activity.

IMP—Initiator multi-purpose.

IPB—Illustrated parts breakdown.

JULIAN DATE—The year and numerical day of the year identified by four numeric characters. The first character indicates the year, and the remaining three characters specify the day of the year. For example, 3030 indicates the 30th day of 1983.

KINKED—A twist or curl, as in cable, wire, or tubing, caused by its doubling or bending upon itself.

LOX—Liquid oxygen.

LRU—Leg restraint unit.

MAINTENANCE—The function of retaining material in or restoring it to a serviceable condition.

MBEU—Martin-Baker Ejection Unit (seat).

MIM—Maintenance Instruction Manual.

MRC—Maintenance Requirement Card.

MULTIMETER—An instrument used for measuring resistance, voltage, or amperage.

NACES—Naval aircrew escape system.

NADEP—Naval Aviation Depot.

NATOPS—Naval Air Training and Operating Procedures Standardization.

NAVAIRSYSCOM—NAVAIR; NA (Naval Air Systems Command).

NFO—Naval flight officer.

NOMENCLATURE—A system of names; systematic naming.

NOTE—An operating procedure, condition, etc., which, because of its importance, is essential to highlight.

NSN—National stock number.

OPNAV—Office of the Chief of Naval Operations.

OXIDATION—That process by which oxygen unites with some other substance, causing rust or corrosion.

PHYSIOLOGICAL—Of or pertaining to the body.

PRESSURE—The amount of force distributed over each unit of area. Pressure is expressed in pounds per square inch (psi).

PSI—Pounds per square inch.

PSIA—Pounds per square inch absolute.

PSIG—Pounds per square inch gauge.

PSYCHOLOGICAL—Pertaining to, or derived from the mind or emotions.

RAC—Rapid action change.

SAFETY WIRE/LOCKWIRE—A wire set into a component to lock movable parts into a safe, secure position.

SDLM—Standard depot-level maintenance.

SE—Support equipment. All the equipment on the ground needed to support aircraft in a state of readiness for flight. Formerly ground support equipment (GSE).

SERVICING—The filling of an aircraft with consumables such as fuel, oil, and compressed gases to predetermined levels, pressure, quantities, or weights.

SJU—Seat jettison unit.

SMDC—Shielded mild detonating cord.

SOLVENT—A liquid that dissolves other substances.

SPCC—Ships Parts Control Center.

TENSION—A force or pressure exerting a pull or resistance.

TM—Type maintenance.

T/M/S—Type/model/series.

TORQUE—A turning or twisting force.

TOXIC—Harmful, destructive, deadly; poisonous.

VOLATILE LIQUIDS—Liquids that are readily vaporizable at relatively low temperatures. Explosive liquids.

WARNING—An operating procedure, practice, etc., that if not followed correctly

could result in personal injury or loss or life.

WORK—The transference of energy from one body or system to another. That which is accomplished by a force acting through a distance.

APPENDIX II

REFERENCES

CHAPTER 1

Aviators Breathing Oxygen Surveillance Program and Field Guide, AG-332AO-GYD-000, Naval Air Systems Command, Washington, D.C., October 1985.

General Use Cartridges and Cartridge-Actuated Devices (CADS) for Aircraft and Associated Equipment, NAVAIR 11-100-1.1, Naval Air Systems Command, Washington, D.C., September 1984.

Cartridges and Cartridge-Actuated Devices (CADS) for Unique Aircraft Systems, NAVAIR 11-100-1.2, Naval Air Systems Command, Washington, D.C., September 1984.

Naval Aviation Maintenance Program (NAMP), OPNAVINST 4790.2 (series), Vol II, Office of the Chief of Naval Operations, Washington, D.C., January 1989.

NAVOSH Programs Manual for Forces Afloat, OPNAVINST 5100.19B, Department of the Navy, Office of the Chief of Naval Operations, Washington, D.C., April 1989.

NAVAIROSH Requirements for the Shore Establishment, NAVAIR A1-NASOH-SAF-0001P-5100.1, Naval Air Systems Command, Washington, D.C., February 1986.

CHAPTER 2

F/A-18 Seat, Canopy, Survival Equipment, and Boarding Ladder, A1-F18AC-120-100, Naval Air Systems Command, Washington, D.C., August 1988.

F/A-18 Seat, Canopy, Survival Equipment, and Boarding Ladder, A1-F18AC-120-300, Naval Air Systems Command, Washington, D.C., August 1988.

General Use Cartridges and Cartridge-Actuated Devices for Aircraft and Associated Equipment, NAVAIR 11-100-1.1, Chapter 1, Naval Air Systems Command, Washington, D.C., September 1984.

Principles of Operation Environmental Control System, A1-F18AA-410-100, Work Packages 008 00, 012 00, and 013 00, Naval Air Systems Command, Washington, D.C., March 1980.

CHAPTER 3

P-3 Utility Systems, NAVAIR 01-75PAA-2-2.4, Naval Air Systems Command, Washington, D.C., January 1988.

A-6 Environmental Control Systems, NAVAIR 01-85ADF-2-2.5.1, Naval Air Systems Command, Washington, D.C., August 1988.

Escape and Survival Systems, NAVAIR 01-85ADF-2-2.4, Naval Air Systems Command, Washington, D.C., May 1987.

Utility, Environmental and Personnel Survival Equipment, NAVAIR 01-85WBA-2-2.4, Section II, Naval Air Systems Command, Washington, D.C., April 1981.

CHAPTER 4

Navy Electricity and Electronics Training Series, NAVEDTRA 172-03-00-85, Module 3, Chapter 1, Naval Education and Training Program Development Center, Pensacola, Fla., 1985. (The Naval Education and Training Program Development Center became the Naval Education and Training Program Management Support Activity on 1 Sep 1986.)

Principles of Operation Environmental Control System, NAVAIR 01-S3AAA-2-2.7, Naval Air Systems Command, Washington, D.C., September 1985.

Principles of Operation Propulsion System, NAVAIR 01-S3AAA-2-2.6, Work Package 00408, Naval Air Systems Command, Washington, D.C., April 1980.

Principles of Operation Airframe Group Systems, NAVAIR 01-S3AAA-2-2.2, Work Packages 00307, 00308, 00309, and 013 13, Naval Air Systems Command, Washington, D.C., July 1977.

S-3 Testing and Troubleshooting Environmental Control System, NAVAIR 01-S3AAA-2-3.7, Naval Air Systems Command, Washington, D.C., September 1985.

CHAPTER 5

Organization Maintenance With IPB Aircraft Ejection Seat SJU-17(V)1/A and SJU-17(V)2/A, F/A-18C and F/A-18D Aircraft, NAVAIR 13-1-29, Preliminary Technical Manual, Naval Air Systems Command, Washington, D.C., April 1990.

NATOPS Flight Manual F/A-18C and F/A-18D Aircraft Ejection Seats, A1-F18AE-NFM-000, Preliminary Technical Manual, Martin-Baker Aircraft Company, Oxford, England, January 1990.

Description and Principles of Operation, Navy Aircrew Common Ejection Seats (NACES) SJU-17(V)1/A and SJU-17(V)2/A, F/A-18C and F/A-18D Aircraft, A1-F18AE-120-100, Preliminary Technical Manual, Martin-Baker Aircraft Company, Oxford, England, January 1990.

Turnaround Check List, F/A-18C and F/A-18D Aircraft, A1-F18AE-MRC-100, Preliminary Technical Manual, Martin-Baker Aircraft Company, Oxford, England, January 1990.

INDEX

A

Air-conditioning systems, 4-1 to 4-19
 air-conditioning systems, 4-9 to 4-19
 cabin temperature control subsystem,
 4-14 to 4-18
 system components, 4-16 to 4-18
 system operation, 4-14 to 4-16
 environmental control panel, 4-18 to
 4-19
 air-conditioning switch, 4-19
 cabin air temperature selector,
 4-19
 ram-air valve position selector,
 4-18 to 4-19
 refrigeration subsystem, 4-9 to
 4-13
 components, 4-10 to 4-14
 system operation, 4-10
bleed-air system, 4-1 to 4-9
 system components, 4-3 to 4-9
 bleed-air flow control and
 shutoff valve, 4-6 to 4-9
 bleed-air shutoff valve, 4-5 to
 4-6
 bleed-air transmitter, 4-9
 check valves, 4-6
 engine bleed-air bypass and
 shutoff valve, 4-6
 high-stage bleed-air regulator
 valve, 4-3 to 4-5
 low-stage bleed-air check valve,
 4-6
 system operation, 4-1 to 4-3
 APU bleed air, 4-3
 engine bleed air, 4-1 to 4-3
 SE ground start air, 4-3

B

Bleed-air system, 4-1 to 4-9
Bleed-air utility systems, 3-1 to 3-10

C

Cabin temperature control subsystem, 4-14 to
4-18
Canopy system, electrically operated, 2-1 to
2-13

D

Deice systems 3-1 to 3-6

E

Ejection seat cartridges and cartridge-actuated
devices (CAD), 1-8 to 1-11
Ejection seat check-outs, 1-7 to 1-8
Electrically operated canopy system, 2-1 to
2-13
 canopy system, 2-1 to 2-7
 miscellaneous components, 2-6 to 2-7
 system components, 2-1 to 2-6
 canopy, 2-1
 canopy actuator, 2-1 to 2-3
 canopy actuator manual drive
 unit, 2-3 to 2-4
 canopy contractors, 2-4
 canopy control switches, 2-4
 canopy locked switch, 2-4 to
 2-6
 canopy position switch, 2-6
 canopy pressure seal, 2-1
emergency canopy jettison system, 2-10 to
2-13
 components, 2-10 to 2-12
 canopy jettison rocket motor,
 2-11
 canopy jettison rocket motor
 initiators, 2-11
 canopy jettison SMDC initiator,
 2-10
 canopy unlatch thruster and
 cartridge, 2-11

Electrically operated canopy system—Continued
 emergency canopy jettison system—Continued
 components—Continued
 emergency escape disconnect
 2-10 to 2-11
 external canopy jettison handles
 and cables, 2-10
 internal canopy jettison lever,
 2-10
 one-way transfer valve, 2-10
 SMDC/FCDC initiators, 2-11 to
 2-12
 procedures, 2-13
 external canopy jettison, 2-13
 internal canopy jettison, 2-13
 normal operation, 2-7 to 2-10
 backup manual control mode, 2-7 to
 2-10
 normal control mode, 2-7
 Environmental control panel 4-18 to 4-19
 Explosive safety devices (OPNAV 4790/26A),
 installed, 1-12 to 1-13

G

Gaseous oxygen, 1-5 to 1-6
 Glossary, AI-1 to AI-3

H

High-pressure air, 1-6 to 1-7

L

Liquid oxygen, 1-4 to 1-5

M

Management safety and supervision, 1-1 to
 1-13
 policy for safety program, 1-13
 safety 1-1 to 1-4
 enforcement, 1-3
 environmental conditions, 1-2
 equipment, 1-2 to 1-3
 organization and administration of
 a safety program, 1-2

Management safety and supervision—Continued

 safety—Continued
 planning for advanced base or
 forward area operations, 1-3 to 1-4
 safety education, 1-3
 safety inspections, 1-3
 tools, 1-2
 work areas, 1-2
 safety precautions for ejection seats and
 explosive devices, 1-7 to 1-13
 ejection seat cartridges and cartridge-
 actuated devices (CAD), 1-8 to
 1-11
 CAD maintenance policy, 1-10
 to 1-11
 expiration date, 1-8 to 1-10
 marking expiration dates, 1-10
 reporting, 1-11
 service life, 1-8
 service-life change, 1-10
 service-life extension, 1-10
 ejection seat check-outs, 1-7 to 1-8
 installed explosive safety devices
 (OPNAV 4790/26A), 1-12 to 1-13
 safety precautions for hazardous sub-
 stances, 1-4 to 1-7
 gaseous oxygen, 1-5 to 1-6
 gaseous oxygen servicing trailer,
 1-6
 quality control requirements of
 gaseous oxygen, 1-6
 high-pressure air, 1-6 to 1-7
 liquid oxygen, 1-4 to 1-5
 description and properties of
 liquid oxygen, 1-4 to 1-5
 LOX contamination, 1-5
 personnel, 1-5
 physical properties of liquid
 oxygen, 1-5

N

Navy Aircrew Common Ejection Seat
 (NACES), 5-1 to 5-38
 organizational-level maintenance, 5-38
 system description and components, 5-1
 to 5-38
 component operation, 5-26 to 5-34
 catapult assembly, 5-26
 main beams assembly, 5-26 to
 5-32
 parachute canopy and drogue,
 5-33 to 5-34

Navy Aircrew Common Ejection Seat
(NACES)—Continued
system description and components—
Continued

component operation—Continued
seat bucket assembly, 5-32 to
5-33
seat survival kit, 5-34
ejection sequence, 5-34 to 5-35
functional description, 5-1 to 5-4
physical decryption, 5-4 to 5-26
catapult assembly, 5-4 to 5-7
main beams assembly, 5-7 to
5-16
parachute assembly, 5-24 to 5-25
seat bucket assembly, 5-16 to
5-23
seat survival kit assembly, 5-25
to 5-26
sequencer mode, 5-35 to 5-38
summary, 5-38

R

Rain removal system, 3-6 to 3-10
References, AII-1 to AII-2

Refrigeration subsystem, 4-9 to 4-13

S

Safety precautions for ejection seats and
explosive devices, 1-7 to 1-13
SMDC/FCDC initiators, 2-11 to 2-12

U

Utility systems, 3-1 to 3-10
bleed-air utility systems, 3-1 to 3-10
deice systems, 3-1 to 3-6
description and components, 3-1
to 3-5
maintenance, 3-6
operation, 3-5 to 3-6
rain removal system, 3-6 to 3-10
description and components, 3-7
to 3-9
system operation, 3-10

